

## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, D.C. 20460

NOV - 5 2007

OFFICE OF AIR AND RADIATION

Mr. Brad Henke Sales Manager Air Technology Business Unit Cummins Filtration Cummins Emission Solutions 1801 US Hwy 51/138 Stoughton, Wisconsin 53589

Dear Mr. Henke:

The U.S. Environmental Protection Agency (EPA) has reviewed your request for full verification of the Cummins Emission Solutions & Cummins Filtration Diesel Oxidation Catalyst and Closed Crankcase Ventilation system. Based on our evaluation of the verification application, the test data, and additional information provided, EPA hereby fully verifies this technology for the emission reductions described below. This verification is for purpose of EPA's National Clean Diesel Campaign. This full verification supersedes the prior conditional verification dated May 10, 2007.

This product was tested under EPA's Environmental Technology Verification (ETV) program. This technology combination is approved for use on the following categories of engines and/or vehicles provided all of the required operating criteria are met as described below:

All 4-cycle non-EGR highway, medium-heavy and heavy-heavy duty diesel engines including turbo-charged or naturally aspirated, mechanically or electronically injected, and originally manufactured from 1991 through 2003 model years which meet a 5 or 4 g/bhp-hr NOx standard and a 0.25 or 0.1 g/bhp-hr PM standard that were not originally certified with a diesel oxidation catalyst and not built with a CCV system. This verification only applies to the system that includes a DOC manufactured by Johnson Matthey, Inc. and the Cummins Filtration CCV control system.

| Technology   | Fuel<br>(sulfur content) | Particulate<br>Matter<br>(PM) % | Carbon<br>Monoxide<br>(CO) % | Hydrocarbons<br>(HC)<br>% | Oxide of<br>Nitrogen<br>(NOx) % |
|--|--------------------------|---------------------------------|------------------------------|---------------------------|---------------------------------|
| Cummins Emission Solutions & Cummins Filtration DOC & CCV System | ≤ 15 ppm                 | 30                              | 50                           | 74                        | n/a                             |

The following operating criteria must be met in order for appropriately retrofitted engines to achieve the aforementioned emissions reductions:

- 1. The engine should be well maintained and not consume lubricating oil at a rate greater than that specified by the engine manufacturer.
- 2. The engine must be operated with a fuel that contains a sulfur content of no more than 15 ppm.
- 3. The engine exhaust temperature must be at least 150 degrees C during the duty cycle.
- 4. The closed crankcase ventilation system filter cartridges must be replaced every year or 1000 engine hours, whichever occurs first.

Information on the Cummins' DOC and CCV technology, percent reductions, applicable engines, and in-use testing program will be posted on the EPA's National Clean Diesel Campaign website (<a href="http://www.epa.gov/cleandiesel">http://www.epa.gov/cleandiesel</a>). As you know, Cummins will be responsible for completing the required in-use testing program and for submitting all in-use testing data to EPA. Thank you for participating in EPA's National Clean Diesel Campaign. If you have any questions or comments, please contact Steve Albrink, of my staff, at (202) 343-9671.

Sincerely,

Merrylin Zaw-Mon, Director

Transportation and Regional Programs Division

Office of Transportation and Air Quality